

ABSTRACT

An elastic wave pulse is generated in a metal rod (1) by impacting an end surface (2) of the metal rod with each of two round, concentric projectiles (8, 10) from a double launch tube (4, 5) independently, and by impacting both projectiles simultaneously or at a prescribed time interval. An acceleration sensor (23) is provided on another end surface (22) of the metal rod to measure an acceleration of the other end surface arising when the elastic wave pulse generated by the impact of the projectiles reflects at the other end surface. The motion of the end surface is measured by a laser interferometer (24) or by a strain gauge (25) provided on a side surface of the metal rod, and the measured signals are calculated and corrected as appropriate. The dynamic linearity of the acceleration sensor is obtained by comparing in time domain and frequency domain the calculated results with the measured values of the acceleration sensor.